PATENT

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Application No.: 10/637,221

Applicant: Randall M. Smith

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Title: APPARATUS AND METHOD FOR DIAGNOSING BREAST-CANCER INCLUDING EXAMINATION TABLE

CUSTOMER NO. 27717

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Examiner: Amanda L. Lauritzen

Group Art Unit: 3737

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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Applicants respectfully request reconsideration of the rejections of the Office Action dated June 21, 2010.

Claims 1-46 and 48-53 are pending and at issue. Applicants note that the Office Action states that claims 1-53 stand rejected, but claim 47 was canceled in the previous amendment such that only claims 1-46 and 48-53 are pending and at issue.

Applicants would like to thank the Examiner for participating in an interview to discuss the present claims and cited references. Applicants had discussed the substantive differences between the present claims and cited references, highlighting the significant technical differences between the technology recited in the present claims and that found in the cited references.

Claims 1-46 and 48-53 stand rejected under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the written description requirement. Claims 1, 2, 6, 7, 9, 10, 17-

20, 21, 24-38, 41-46 and 49-53 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,983,124 to Carr. Additional claims stand rejected in view of combinations of Carr with other references. However, for the sake of brevity for this Request for Review, Applicants will limit the discussion to the above noted rejections.

As discussed during the interview with the Examiner and as stated in the previous Amendment, there are significant technical differences between the features recited in the claims and the technology found in Carr and the other cited art. A brief discussion of these technologies will hopefully help clear up any confusion.

Generally, Carr is directed to a method of detection that attempts to determine the differences in natural radiation of normal tissue with that of cancerous tissue. But, due to normal differences of tissue radiation no useful information can be determined from the pattern of radiation from a single breast. Such a method using natural radiation of tissue is frequently tainted from background noise radiation from the tissue and that different patients emit different natural radiation. Observation of the second breast is required to determine if radiation variations in the first breast are normal for the individual. An image using this method cannot be developed from variations in microwave radiation from a single breast thus limiting the technique to persons with two breast and an abnormality in one distinct from an abnormality in the other.

The features recited in the present claims, on the other hand, ignores the background or noise radiation from the tissue and instead transmits a coherent microwave signal of known frequency, amplitude, phase and having a known pattern and direction (a predetermined microwave waveform as understood by those skilled in the art). Then, a microwave receiver is

used and tuned only to receive the transmitted microwave signal. The receiver detects the amplitude and phase of the reflected signal and from the known antenna pattern can determine the approximate location of any tissue that has amplitude and phase characteristics different from immediately surrounding tissue. Moving the antenna in a pattern and recording the results from each position then effectively changes antenna aperture. As can be seen in the above comparison, the two technologies are entirely different.

With the above discussion in mind, the claims will be briefly discussed with respect to Carr and the other cited art. Independent claim 1 recites a microwave assembly for directing a predefined waveform to the breast and receiving reflected microwave energy from the breast under examination resulting from the predefined microwave waveform (the remaining independent claims recite similar features). Carr simply fails to disclose or suggest these features, and, in fact, is directed to an entirely different form of technology which does not use reflected microwave energy. Instead, as discussed above, Carr is detecting the noise and weak signals emitted from the patient without any additional microwave waveforms being directed to the patient which may be reflected to aid in detection.

The claims also recite detecting the reflected microwave energy that results from the predefined microwave waveform that is directed to the patient. As Carr fails to direct any predefined microwave waveforms to into the patient, it obviously cannot receive the reflected microwave energy that results from the predefined microwave waveforms that are directed into the patient. For at least these reasons, the rejections of the claims should be withdrawn.

Independent claim 41 further recites generating a 3D generated scan image of the breasts using reflected microwave energy from each breast independently resulting from the predefined

microwave waveform. Carr simply fails to disclose such features, and in fact, teaches away from such features. As discussed throughout Carr, based on the type of technology used, it is required that the patient's breasts are compared to create any usable information. For example, in the Summary of Invention in Carr, the reference specifically states that it makes a temperature comparison at corresponding locations on the patient's breasts. This comparison is required to help decipher between the weak signals and the noise detected. Therefore, if a patient has already had one breast removed, Carr's system would be useless as there would be no baseline for comparison of the detected weak signals and noise. For this additional reason, the rejection of claim 41 should be withdrawn.

As discussed above, claim 41 also recites generating a 3D generated scan image of the breasts using reflected microwave energy from each breast independently resulting from the predefined microwave waveform. Carr is incapable of generating such a 3D image. Specifically, as discussed above, Carr is directed to a passive system for detecting weak energy and noise emitted from a patient's breast. These signals can only be detected as they are emitted from the surface of the breast. There is no teaching or suggestion that such signals could be detected subcutaneously to generate data for a 3D image. Therefore, for this additional reason, this rejection of claim 41 should be withdrawn.

Applicants would also like to point out that the rejection under 35 U.S.C. § 112, first paragraph, should also be withdrawn as one skilled in the art would readily understand what a "predefined microwave waveform" would mean. As discussed above in the summary of the present claims, such terminology is readily understood by those skilled in the art and would further understand that such language readily distinguishes the present claims over Carr.

Applicants respectfully request withdrawal of the present rejections and allowance of the application.

Respectfully submitted,

By _____

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